YUANZHI ZHU

Phone: +33 0745652986
E-Mail: yuanzhi.zhu@polytechnique.edu
Homepage: https://yuanzhi-zhu.github.io/about/

EDUCATION BACKGROUND

01/2025- **Ecole Polytechnique, Paris, France**
- PhD student

10/2020-05/2024 **Swiss Federal Institute of Technology (ETH Zurich)**, Zurich, Switzerland
- Master in **Electrical Engineering and Information Technology**
- GPA: 5.616/6.0

10/2019-04/2020 **Technical University of Munich (TUM)**, Munich, Germany
- Exchange Program in **Electrical and Computer Engineering**
- GPA: 4.0/4.0 (1.0/1.0)

09/2016-06/2020 **Beihang University (BUAA)**, Beijing, China
- Bachelor of Engineering in **Electrical Engineering**
- GPA: 3.762/4.0 (90.73/100)

INTERNSHIP EXPERIENCE

07/2024-11/2024 Research Intern at 01.ai**,** (remote)

10/2023-07/2024 Research Assistant at **University of Texas at Austin,** (remote)
- with Prof. Qiang Liu

06/2020-10/2020 Teaching Assistant at Beihang University, (remote)
- Summer School

RESEARCH INTERESTS **Computer Vision and Generative Models**: Diffusion Models; Efficient Generative Models; Multi-model Generation; Conditional Generation and Image Restoration

PUBLICATIONS (google scholar)

[1] **Yuanzhi Zhu**, Xi Wang, Stéphane Lathuilière, Vicky Kalogeiton. Di[M]O: Distilling Masked Diffusion Models into One-step Generator, *ICCV* (2025)

[2] **Yuanzhi Zhu**, Ruiqing Wang, Shilin Lu, Junnan Li, Hanshu Yan, Kai Zhang. OFTSR: One-Step Flow for Image Super-Resolution with Tunable Fidelity-Realism Trade-offs, *Arxiv* (2024)

[3] **Yuanzhi Zhu**, Xingchao Liu, Qiang Liu. SlimFlow: Training Smaller One-Step Diffusion Models with Rectified Flow, *ECCV* (2024)

[4] **Yuanzhi Zhu**, Kai Zhang, Jingyun Liang, Jiezhang Cao, Bihan Wen, Radu Timofte, Luc Van Gool. Denoising Diffusion Models for Plug-and-Play Image Restoration, *CVPRW* (2023) (70+ citations & 300+ GitHub stars)

[5] Jun Ma, **Yuanzhi Zhu**, Chenyu You, Bo Wang. Pre-trained Diffusion Models for Plug-and-Play Medical Image Enhancement, *MICCAI* (2023)

[6] Zixiang Zhao, Haowen Bai, **Yuanzhi Zhu**, Jiangshe Zhang, Shuang Xu, Yulun Zhang, Kai Zhang, Deyu Meng, Radu Timofte, Luc Van Gool. DDFM: Denoising Diffusion Model for Multi-Modality Image Fusion, *ICCV oral* (2023)

[7] Zhizhong Zhang*, **Yuanzhi Zhu***, Yue Zhang, Weisheng Zhao, et al. Skyrmion-based Ultra-low Power Electric-field-controlled Reconfigurable (SUPER) Logic Gate, *IEEE Electron Device Letters* (Published as cover in 2019) (* These authors contributed equally to this work)

[8] Hayato Mizuno, Hironari Isshiki, Kouta Kondou, **Yuanzhi Zhu**, and Yoshichika Otani. Influence of Planar Hall Effect on the Output signal in a T-shaped Spin Conversion Device, *Appl. Phys. Lett. 119, 092401* (2021)

RESEARCH EXPERIENCES

03/2023-09/2023 **Text-driven NeRF Editing with Diffusion Models (5.75/6),** *Supervisor: Prof. Siyu Tang;*
VLG, ETH Zurich *Advisor: Dr. Anpei Chen*
- Investigated NeRF generation/editing framework that bypasses the need for extensive 3D data and instead utilizes 2D generative prior
- Studied algorithms such as Score Distillation Sampling (SDS) and Variational Score Distillation (VSD) and proposed a better explanation of how they work
- Apply several 2D editing approaches to NeRF editing

05/2022-02/2023 *CVL, ETH zurich*	**Denoising Diffusion Models for Plug-and-Play Image Restoration (5.75/6),** *Supervisor: Prof. Luc Van Gool; Advisor: Dr. Kai Zhang, Jingyun Liang, Jiezhang Cao* • Investigated general image restoration tasks with score-based diffusion models • Combined the diffusion sampling algorithm (e.g. DDIM) with Half-Quadratic Splitting (HQS) algorithm for conditional generation with less than 100 sampling steps • Image restoration with details for severely ill-posed image restoration tasks, including image inpainting, image deblurring and super resolution
10/2021-03/2022 *Disco, ETH zurich*	**Using Affordances to Understand Fan-Idol Interaction on Social Media (5.5/6),** *Supervisor: Prof. Roger Wattenhofer; Advisor: Dr. Ye Wang* • Collected data from the social medias using Python • Pre-processed all the data collected and using several natural language models together with word embeddings for sentiment analysis of the posts from idols • Designed an interview protocol and conducted interviews with fans of SNH48
07/2019-10/2019 *University of Tokyo*	**Logic Device based on Inverse Spin Hall Effect (ISHE),** *Supervisor: Prof. Yoshichika Otani* • Studied and used the spin transport property in different materials to get a clear Inverse Spin Hall Effect signal • Built a model using OOMMF and GetDP to study the magnetization reversal and spin transport property of different material with complex structure • Utilized the ISHE to propose logic device, performed current and harvested the logic output like 0 and 1 based on the magnetization direction of the ferromagnetic layer
08/2017-06/2019 *Beijing Advanced Innovation Center for Big Data and Brain Computing (BDBC)*	**Skyrmion-based Ultra-low Power Electric-field-controlled Reconfigurable (SUPER) Logic Gate,** *Supervisor: Prof. Yue Zhang* • Proposed a novel designed skyrmion-based logic gate for high-performance computing, and extended it for ultra-low power parallel computing and brain-like computing • Introduced artificial fishtail-shaped hollows for implementing skyrmion divisions, and performed micro-magnetic simulations to validate the logic operations and divisions • Enabled re-configurable logic operations including AND, OR, XOR, NOR, NAND to be implemented in single logic gate by leveraging Voltage-Controlled Magnetic Anisotropy (VCMA) effect

SELECTED HONORS & AWARDS

11/2018,11/2019	Academic Competition Scholarship, Beihang University (Twice)
11/2018,11/2019	Academic Excellence Scholarship, Beihang University (Twice)
09/2017, 09/2018	Second Prize in China Undergraduate Mathematical Contest in Model (Twice)
03/2018	China Undergraduate Physics Tournament (CUPT) (Ranked 47/305)
02/2018	Meritorious Winner in The Mathematical Contest in Modeling
12/2017	First Prize in Beijing Undergraduate Physics Competition (Ranked 59/1023, Beijing)
10/2017	First-Class Scholarship, Beihang University
09/2017	First Prize in Beijing Undergraduate Mathematics Competition (Ranked 87/1276, Beijing)

SOCIAL PRACTICES & EXTRACURRICULAR ACTIVITIES

09/2016-05/2018	**Public Relations Department, Beihang Student Union** • Responsible for seeking sponsorship for campus events • Organized a campus ball, and handled supplies purchase and the on-spot coordination
08/2018	**Aerospace Information Co., Ltd.** • Investigated the impact of emerging technology companies on tax policy • Studied technology companies' business philosophy and key technologies
07/2017-08/2017	**Practice at Mount. Dadingzi Navigation and Hydroelectric Junction** • Carried out the research into the operative and navigable situation of the Junction • Investigated on the living conditions of residents around the project

LANGUAGE PROFICIENCY Chinese (Native); English (C1); German (A2)